

A new lycaenid butterfly from China :
Satyrium redae sp.n.
(Lepidoptera : Lycaenidae)

G. C. BOZANO

Viale Romagna 76, I-20133 Milano, Italy

Summary

Satyrium redae sp.n. is described from South Gansu, China. The anatomical and morphological characters are typical of the genus *Satyrium* (SCUDDER, 1876) except the presence of a dark white-edged bar at the end of the cell on the fore- and hindwing underside. The new species is compared with *Satyrium v-album* (OBERTHÜR, 1886) and *S. iyonis* (OTA & KUSUNOKI, 1957).

Résumé

Description de *Satyrium redae* sp.n. du Kansu méridional en Chine. Les caractères anatomiques et morphologiques sont typiques du genre *Satyrium* (SCUDDER, 1876), sauf la présence d'une barre foncée à bords blancs à l'extrémité de la cellule sur la face inférieure des ailes antérieures et postérieures. Comparaison de la nouvelle espèce avec *Satyrium v-album* (OBERTHÜR, 1886) et *S. iyonis* (OTA & KUSUNOKI, 1957).

Seven males of a previously undescribed species of *Satyrium* (SCUDDER, 1876) were collected on June 3 1991 at Huixian, South Gansu, China, at an altitude of 1250 m. Huixian is located on the western side of the Qin Ling mountain ridge and is the southernmost locality on the road connecting Baoji (Shaanxi Region) to Tianshui (Gansu Region).

***Satyrium redae* sp.n.**

HOLOTYPE : Male ; "Huixian, mt. 1250, South Gansu, China, 3.VI.1991". Deposited in the Museo di Storia Naturale A. Doria, Genoa, Italy.

PARATYPES : 4 males, same locality and date, in coll. G. C. Bozano, Milano, Italy ; 2 males, same locality and date, in coll. E. Giacomazzo, Venice, Italy.

ETYMOLOGY: The new species is dedicated to the author's wife, Antonella Reda BOZANO, enthusiastic explorer and tireless field entomologist.

DESCRIPTION (Male): Wingspan 25-27 mm. **Upperside** (Fig. 1a): Forewing dark brown; orange spot in space 2; androconial patch well defined, lighter than ground colour. Hindwing grey brown; no orange markings; tails present. **Underside** (Fig. 1b): Forewing grey-brown; median series of white spots, bordered dark inwardly, forming an irregular line; bar at end of cell darker than ground colour and edged with two whitish lines. Hindwing grey-brown; median series of white spots forming irregular line, terminating in space 1c; two orange lunules at tornus separated by blue spot; bar at end of cell darker than ground colour and edged with two whitish lines.

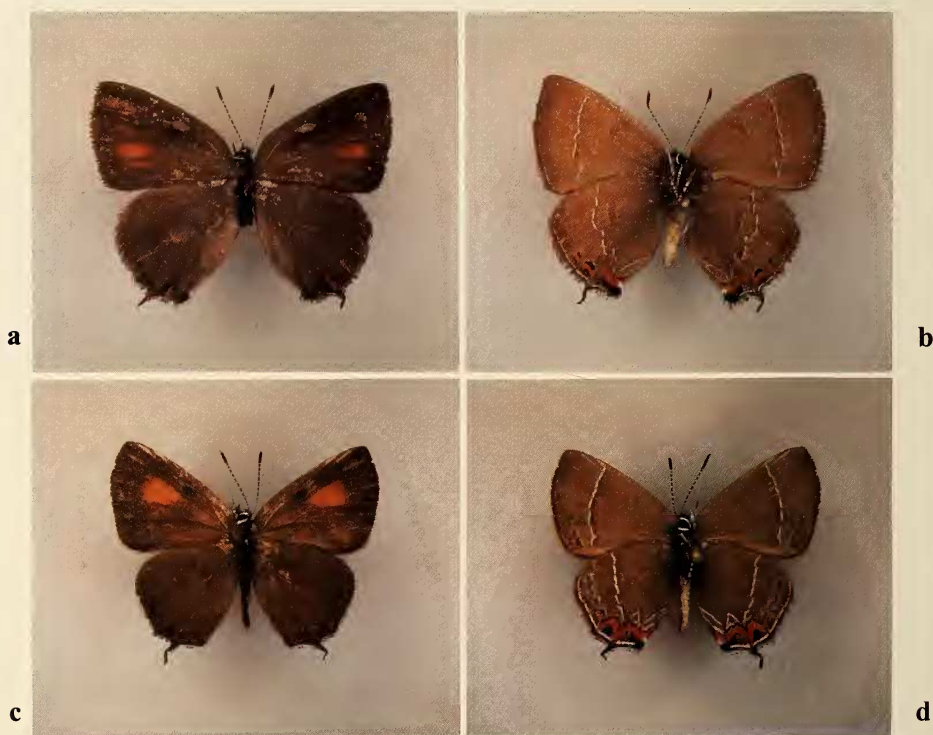


Fig. 1. Male *Satyrium* spp. ($\times 1.5$). a - *S. redae* sp.n., holotype, upperside; b - underside; c - *S. v-album* (OBERTHÜR), upperside (Huixian, 1250 m, S. Gansu); d - same specimen, underside.

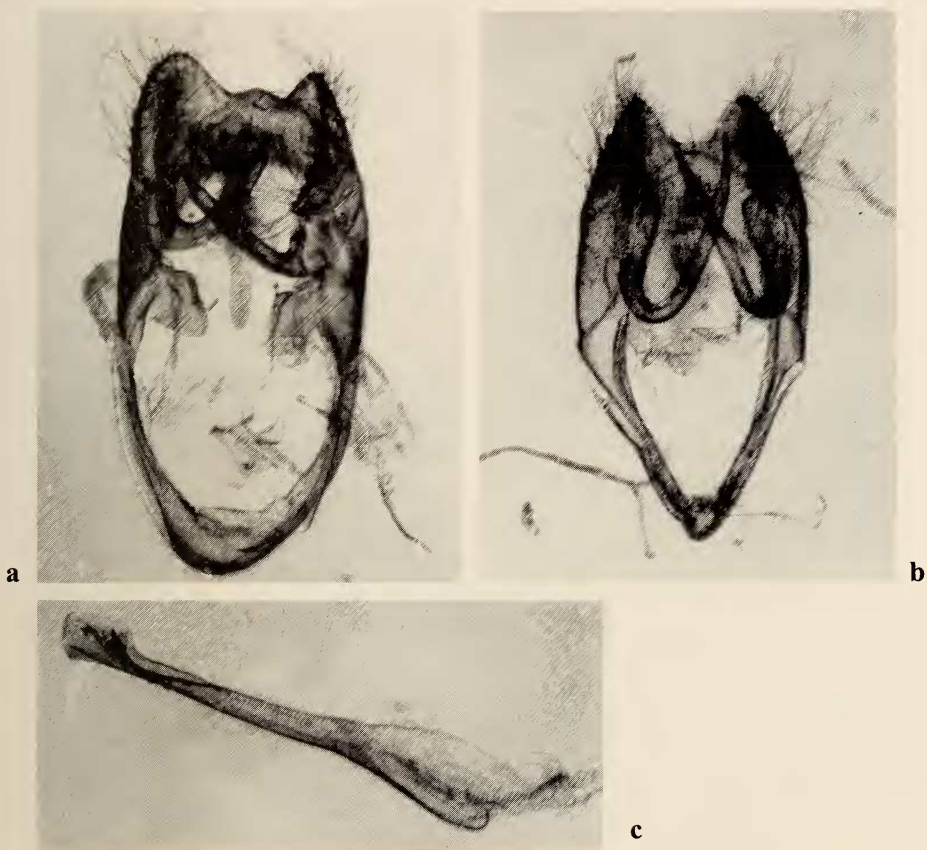


Fig. 2. *Satyrium* spp. male genitalia. a - *S. redae* sp.n., valvae and aedeagus removed ; b - *S. v-album* (OBERTHÜR), valvae and aedeagus removed ; c - *S. redae* sp.n., aedeagus.

MALE GENITALIA (Figs 2a,c ; 3a) : Elongate, about two times as long as wide ; juxta absent ; labides large, square, widely separated ; falces short, robust ; valvae fused at base, wide, terminal section very slender, aedeagus with two dense cornuti.

FEMALE : Unknown.

DIAGNOSIS : The following characters clearly differentiate male *Satyrium redae* sp.n. (Figs 1a, b) from *S. v-album* (OBERTHÜR, 1886) (Figs. 1c, d) and *S. iyonis* (OTA & KUSUNOKI, 1957) (KOIWAYA, 1989 ; LEECH, 1893-4) : **Forewing upperside** : the orange spot is situated in space 2, not in spaces 3 and 4 as in *S. v-album* and *S. iyonis*. **Forewing underside** : bar present at end of cell, median white line irregular (bar

absent and median line regular in *S. v-album* and *S. iyonis*). **Hindwing underside** : Orange lunules separated (joined in *S. v-album* and *S. iyonis*) ; median white line terminates in space 1c (continuous and v-shaped in *S. v-album* and *S. iyonis*) ; marginal markings absent (row of orange-brown spots inwardly bordered dark present in *S. v-album* and *S. iyonis*). **Genitalia** (Fig. 2) : Vinculum rounded (pointed in *S. v-album* and *S. iyonis*) ; labides large and square (small and rounded in *S. v-album* and *S. iyonis*) ; valvae (Fig. 3) abruptly narrowed terminally (gradually in *S. v-album* and *S. iyonis*).

HABITAT : *Satyrium redae* is known only from Huixian, 1250 m, where it was collected on subalpine slopes covered with thick bushes. Other lycaenid species flying in the same biotope include : *Satyrium v-album*, *Satyrium rubicundula* (LEECH, 1890), *Satyrium oenone* (LEECH, 1893), *Fixsenia thalia* (LEECH, 1893) and *Rapala micans* (BREMER & GREY, 1853).

Discussion

The wing pattern of the new species is typical of the genus *Satyrium* and resembles *Satyrium v-album* and *Satyrium iyonis*. However, the

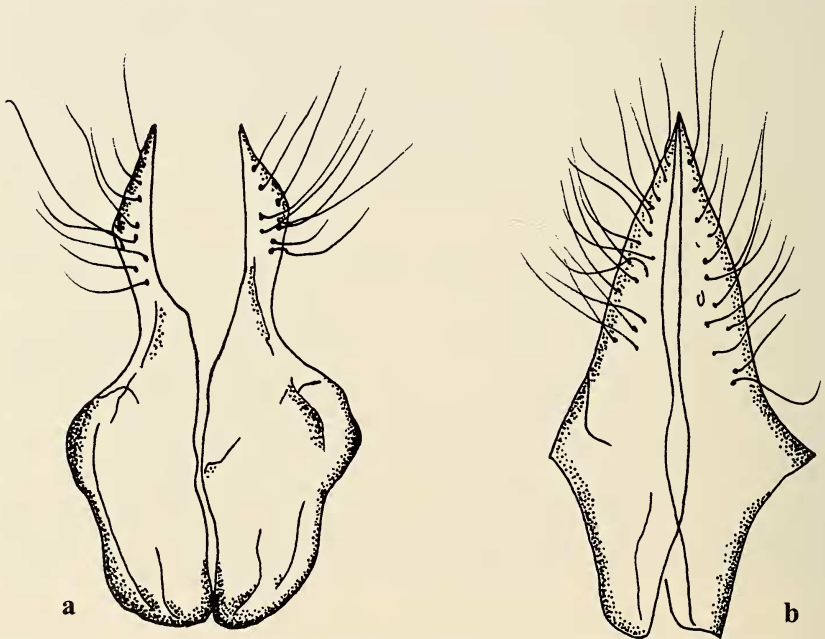


Fig. 3. *Satyrium* spp., male valvae. a - *S. redae* sp.n. ; b - *S. v-album* (OBERTHÜR).

underside exhibits a feature not known in any other Palearctic *Satyrrium* species: Two short, straight, whitish lines enclosing an area darker than the ground colour are present at the end of the cell of both fore- and hindwings. Such markings are always present in *Rapala* (MOORE, [1881]) and in most species of *Chrysozephyrus* (SHIROZU & YAMAMOTO, 1956), *Favonius* (SIBATANI & ITO, 1942) and allied genera.

The relevant morphological features of the tribes Deudorigini (DOHERTY), which includes the genus *Rapala*, Eumaeini (DOUBLEDAY), with *Satyrrium*, and Theclini (SWAINSON), with *Favonius*, *Chrysozephyrus*, etc. are summarised in Table 1 (BRIDGES, 1988; ELIOT, 1973; EVANS, 1927; HIGGINS, 1975; ZHDANKO, 1983). The presence of only 10 forewing veins suggests that the new species belongs to the tribe Eumaeini. The male genitalia (Fig. 2a,c) are typical of the genus *Satyrrium*.

Table 1
Summary of characters distinguishing three tribes of Lycaenidae.
Characters present in the new species are printed in bold.

	Deudorigini	Eumaeini	Theclini
Eyes hairy	yes	yes	no
Forewing veins	11	10	11
Male foretarsus	fused in a single segment	fused in a single segment	usually fused in a single segment except in a few genera
Androconial patch	often present	often present	absent
Male genitalia	juxta absent	juxta absent	juxta present

References

- BRIDGES, C. A., 1988. Catalogue of Lycaenidae & Riodinidae. Urbana, Illinois, USA.
- ELIOT, J. N., 1973. The higher classification of the Lycaenidae (Lepidoptera): A tentative arrangement. *Bull. Br. Mus. nat. Hist. (Ent.)* 28 (6): 371-505.
- EVANS, W. H., 1927. The identification of Indian butterflies. Madras, Bombay.
- HIGGINS, L. G., 1975. The classification of European butterflies. London, Collins.
- KOIWAYA, S., 1989. Studies of Chinese butterflies. Vol. I. Tokyo, Japan.
- LEECH, J. H., 1893-4. Butterflies from China, Japan and Corea. London.
- ZHDANKO, A. B., 1983. Key to the Lycaenid genera (Lepidoptera, Lycaenidae) of the Soviet Union, based on characters of the male genitalia. *Ent. Obozr.* 62:12.